



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0872; Project Identifier AD-2022-00431-R]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Robinson Helicopter Company Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to supersede Airworthiness Directive (AD) 2021-19-08, which applies to certain Robinson Helicopter Company (Robinson) Model R44 and R44 II helicopters. AD 2021-19-08 requires checking each tail rotor blade (blade) for any crack and removing any cracked blade from service. AD 2021-19-08 also requires removing all affected blades from service and prohibits installing any affected blade on any helicopter. Since the FAA issued AD 2021-19-08, it was determined that an additional model helicopter and additional blades are affected by the unsafe condition. This proposed AD would require the same actions as AD 2021-19-08 and would add certain Robinson Model R66 helicopters to the applicability and add additional part-numbered and serial-numbered blades to the applicability. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Robinson Helicopter Company, 2901 Airport Drive, Torrance, CA, 90505, United States; phone: (310) 539-0508; email: [ts1@robinsonheli.com](mailto:ts1@robinsonheli.com); website: <https://robinsonheli.com/>. You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0872; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** James Guo, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5357; email [james.guo@faa.gov](mailto:james.guo@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-0872; Project Identifier AD-2022-00431-R” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any

personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this proposed AD.

### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to James Guo, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5357; email [james.guo@faa.gov](mailto:james.guo@faa.gov). Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### **Background**

The FAA issued AD 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021) (AD 2021-19-08), for Robinson Model R44 and R44 II helicopters with a blade part number (P/N) C029-3 with serial number (S/N) 9410 through 9909 inclusive, installed. AD 2021-19-08 was prompted by reports of spanwise cracks found along the leading edge of P/N C029-3 blades, S/N 9410 through 9909. These affected blades were factory-installed or shipped as spares between March and December 2019. The cracks were found at different inspection intervals ranging from preflight inspections to 100-hour inspections. In one instance, a cracked blade was suspected when the pilot felt abnormal vibrations during flight; subsequent investigation determined that the blade was cracked. The cause of the cracks was determined to be a manufacturing defect in the properties of the blade skin that makes the blades prone to stress corrosion cracking. This condition, if not addressed, could result in reduced controllability and subsequent loss of

control of the helicopter. AD 2021-19-08 requires checking each blade for any crack and removing any cracked blade from service. AD 2021-19-08 also requires removing all affected blades from service and prohibits installing any affected blade on any helicopter. The agency issued AD 2021-19-08 to address the unsafe condition on these products.

#### **Actions Since AD 2021-19-08 Was Issued**

Since the FAA issued AD 2021-19-08, two additional cracked blades were discovered; these blades also exhibited stress corrosion cracking, however they were not part of the lot of affected blades that are included in AD 2021-19-08. These new affected blades are from a batch of blades manufactured from a separate lot of material, and testing determined that they are also susceptible to stress corrosion cracking and can be installed on Robinson Model R44, R44 II, and R66 helicopters. Additionally, while AD 2021-19-08 was issued as a Final rule; request for comments, the FAA has determined that, because the risk model predictions for the additional helicopter model and blades are lower, providing notice and opportunity for public comment is appropriate.

Since the issuance of 2021-19-08, the FAA received one comment from Robinson requesting that the FAA correct an inaccurate statement in the background section of the preamble text. Discovery of the incident was incorrectly described as a pilot feeling abnormal vibrations during flight. The incident was actually discovered when the ground crew noticed an abnormal noise during a shipboard landing.

#### **FAA's Determination**

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type designs.

#### **Related Service Information**

The FAA reviewed Robinson R44 Service Bulletin SB-108, dated June 30, 2021. This service bulletin specifies removing P/N C029-3 blades with S/N 9410 through 9909 from service. For continued operation until the affected blades are replaced, the service bulletin specifies a preflight inspection to be performed by the pilot.

The FAA also reviewed Robinson R44 Service Bulletin SB-110, which specifies removing P/N C029-3 blades with S/N 9910 through 10659 from service and Robinson

R66 Service Bulletin SB-40, which specifies removing P/N F029-1 blades with S/N 2410 through 2589 from service. Both of these service bulletins are dated January 6, 2022 and specify that a preflight inspection is to be performed by the pilot for continued operation until the affected blades are replaced.

### **Proposed AD Requirements in this NPRM**

This proposed AD would continue to require, before further flight and thereafter before each flight, checking each affected blade for any crack along the leading edge of the blade. An owner/operator (pilot) holding at least a private pilot certificate may perform this proposed check and would have to enter compliance with the applicable paragraph of this proposed AD in the helicopter maintenance records in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). A pilot may perform this check because it involves visually checking each blade for a crack. This action could be performed equally well by a pilot or a mechanic. This check is an exception to the FAA's standard maintenance regulations. This proposed AD would also continue to require, before further flight, removing from service any cracked blade and would prohibit installing the affected blades on any helicopter. This proposed AD would also require, within three months after the effective date of AD 2021-19-08 or within six months after the effective date of this AD, as applicable, removing all affected blades from service. Finally, this proposed AD would revise the applicability by adding blades with P/N C029-3 with S/N 9910 through 10659 inclusive to the applicability for Robinson Model R44 and R44 II helicopters and would also expand the applicability by adding Robinson Model R66 helicopters with blade P/N F-029-1 with S/N 2410 through 2589 inclusive installed.

### **Costs of Compliance**

The FAA estimates that this AD, if adopted as proposed, would affect 432 helicopters of U.S. registry. The FAA estimates the following costs to comply with this proposed AD. Labor costs are estimated at \$85 per work-hour.

Checking a blade for any crack would take about 0.25 work-hour for an estimated cost of up to \$44 per helicopter (up to two affected blades per helicopter) and up to \$19,008 for the U.S. fleet per check. Replacing a blade would take about 3.5 work-hours

and parts would cost about \$3,320 for an estimated cost of \$3,618 per blade and up to \$3,125,952 for the U.S. fleet.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive AD 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021); and

b. Adding the following new airworthiness directive:

**Robinson Helicopter Company:** Docket No. FAA-2022-0872; Project Identifier AD-2022-00431-R.

#### **(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021) (AD 2021-19-08).

#### **(c) Applicability**

This AD applies to the following Robinson Helicopter Company (Robinson) helicopters, certificated in any category:

(1) Robinson Model R44 and R44 II helicopters with a tail rotor blade (blade) part number (P/N) C029-3 with serial number (S/N) 9410 through 9909 inclusive, installed;

(2) Robinson Model R44 and R44 II helicopters with a blade P/N C029-3 with S/N 9910 through 10659 inclusive, installed; and

(3) Robinson Model R66 helicopters with a blade P/N F029-1 with S/N 2410 through 2589 inclusive, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code: 6410, Tail Rotor Blades.

**(e) Unsafe Condition**

This AD was prompted by reports of cracked blades. The FAA is issuing this AD to detect and prevent cracks in the affected blades. The unsafe condition, if not addressed, could result in reduced controllability and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Before further flight after the effective date of this AD and thereafter before each flight, check each blade at the leading edge for a crack. This action may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance with 14 CFR 43.9(a) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(2) If there is any crack, before further flight, remove the blade from service.

(3) For helicopters identified in paragraph (c)(1) of this AD, within 3 months after September 22, 2021 (the effective date of AD 2021-19-08) remove from service any blade identified in paragraph (c)(1) of this AD.

(4) For helicopters identified in paragraphs (c)(2) and (3) of this AD, within 6 months after the effective date of this AD, remove from service any blade identified in paragraph (c)(2) or (3) of this AD, as applicable to your model helicopter.

(5) For helicopters identified in paragraph (c)(1) of this AD, as of September 22, 2021 (the effective date of AD 2021-19-08), do not install a blade identified in paragraph (c)(1) of this AD on any helicopter.

(6) For helicopters identified in paragraphs (c)(2) and (3) of this AD, as of the effective date of this AD, do not install a blade identified in paragraph (c)(2) or (3) of this AD, as applicable to your model helicopter, on any helicopter.

**(h) Special Flight Permits**

Special flight permits are prohibited.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-REQUESTS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) AMOCs approved previously for AD 2021-19-08 are approved as AMOCs for the corresponding requirements in paragraph (g) of this AD.

**(j) Related Information**

For more information about this AD, contact James Guo, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5357; email james.guo@faa.gov.

Issued on July 7, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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